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May 11, 2000

CCN 00-008911

Mr. Brian R. Monson
State Waste Program Office
Idaho Division of Environmental Quality
Boise, ID 83706-1255

REQUEST FOR A "NO LONGER CONTAINED-IN" DETERMINATION FOR WELL DRILLING WATER, DRILL CUTTINGS, AND SECONDARY CONTAINMENT PADS FOR OU 1-07B

Dear Mr. Monson:

This letter is to request Idaho Division of Environmental Quality (DEQ) concurrence for a no longer contained-in (NLCI) determination for waste streams associated with drilling wells for the OU 1-07B Groundwater Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) remedial action at Idaho National Engineering and Environmental Laboratory (INEEL), Test Area North (TAN). Three wells are planned for the FY-00 drilling campaign. These wells are a medial zone Injection Well, TAN-53, and two monitoring Wells, TAN-54 and TAN-55, (see Attachment 1). At the request of WAG 1 DEQ staff, this NLCI will be based upon cumulative risk of all EPA SW 846 Method 8260B VOCs.

The INEEL is requesting a NLCI determination on three separate material types associated with drilling monitoring and remediation wells at TAN in support of the OU 1-07B remedial action. These materials include water and drill cuttings produced by the drilling operations and secondary containment pad soil and gravel.

The three materials types are:

- Drilling Water (water produced during well drilling)
- Drilling Cuttings (sediments and basalt cuttings from the saturated zone produced with drilling water during well drilling)
- Secondary Containment Pad Materials (sand, gravel, and liner material used for containment pad construction).

Information supporting this request and how the drilling process will be performed is provided below under the following subject headings:

1. NLCI Application General
2. NLCI Criteria For Drilling Water
3. NLCI Criteria For Drill Cuttings and Containment Pad Soil and Gravel

4. Well Locations
5. Sampling Frequency and Location
6. Sampling and Analysis Methods and QA/QC

The following process will be used during well construction activities.

1. NLCI APPLICATION GENERAL

1.1 For drilling above the water table, controls for containment of hazardous waste will not be required. When the drilling depth reaches approximately 195 ft below land surface (bls) a temporary barrier will be installed around the well head to contain drilling water produced from the aquifer. As soon as water is produced it will be sampled and analyzed for VOCs by SW846 Method 8260B. Results from the sampling will be used to determine if the NLCID Criteria has been met for the drilling water.

1.2 If the drilling water meets the NLCI criteria, the drill water and cuttings will be determined to "no longer contain" a RCRA listed waste and will be discharged to the ground surface.

1.3 If the drilling water does not meet the NLCI Criteria, drilling will be stopped, secondary containment pads will be installed and drilling will continue (See Attachment 3). The drill water will be considered contaminated with listed waste and will be collected and transferred to the Groundwater Treatment Facility (GWTF) or the Air Stripper Treatment Unit (ASTU) for processing. The drill cuttings will be considered contaminated with listed waste and will be contained in a frac tank until the drilling is complete for a particular well.

1.3.1 After drilling is completed the solid materials will be sampled (drill cuttings from the saturated zone and soil/gravel from the containment pad). The results will be compared to the NLCI criteria for solid material. If the criteria is met, then the solid material including the liner material shall be deemed to "no longer contain" a listed waste. After a hazardous waste determination demonstrates the solid material does not exhibit a characteristic of a hazardous waste, it will be disposed of on the ground near the well.

1.3.2 If the solid materials do not meet the NLCI criteria then the material will be managed as an F001 listed waste. All drill cuttings will be collected for storage pending disposition as an F001 listed waste. The solid material will be placed into storage containers and placed in the OU 1-07B CERCLA Waste Storage Area to be managed as an F001 listed waste.

NLCI CRITERIA FOR DRILLING WATER

2.1 This NLCID will be based upon cumulative risk of all EPA SW 846 Method 8260B VOCs present in the groundwater. The cumulative risk will be based on risk values published as EPA Region 9 Preliminary Remediation Goals (PRGs). The equation for Ingestion and Inhalation Exposures to Carcinogenic Contaminants in water will be used for calculating cumulative risk.

2.2 When drilling activities reach the water table, two samples will be collected and analyzed for VOCs by SW846 Method 8260B.

2.3 If the drilling water is found to have a cumulative risk $<1\times10^{-5}$, then drill water and cuttings will be determined to no longer contain the listed hazardous waste and both will be discharged to the soil surface.

2.4 If the drilling water is found to have a cumulative risk $\geq1\times10^{-5}$ the water and cuttings will be considered F001 listed hazardous waste and must be stored in accordance with hazardous waste requirements under CERCLA. The water and cuttings will then be treated or disposed.

NLCI CRITERIA FOR DRILL CUTTINGS AND CONTAINMENT PAD SOIL, GRAVEL, AND LINER MATERIAL

3.1 This NLCI will only be required if the drilling water does not meet the no-longer contained-in criteria of Section 2. This NLCI will be based upon cumulative risk of all EPA SW 846 Method 8260B VOCs present in the drill cuttings and contaminant pad soil and gravel material. The NLCI will be based on the cumulative risk of $<1\times10^{-5}$ from detected VOC compounds, based on risk values published as EPA Region 9 Preliminary Remediation Goals (PRGs). The equation for Combined Exposures to Carcinogenic Contaminants in Industrial Soil will be used for calculating cumulative risk.

3.2 Drill cuttings from above the saturated zone are not RCRA listed waste and will be discharged to the ground surface.

3.3 The drill cuttings from the saturated zone and the containment pad soil and gravel will be sampled and analyzed in accordance with the Field Sampling Plan (FSP) for Secondary Containment Pads for Test Area North Wells Operable Unit 1-07B (Tomlinson 1998). The drill cuttings and soil/gravel will be sampled and analyzed separately. The FSP (Tomlinson 1998) has been reviewed and approved by DEQ during previous well drilling activities.

3.4 If the cumulative risk of all EPA SW 846 Method 8260B VOCs in the solid material is $<1\times10^{-5}$ then the solid material including the liner material shall be deemed to "no longer contain" a RCRA listed waste.

3.5 If the cumulative risk of all EPA SW 846 Method 8260B VOCs in the solid material (i.e., drill cuttings from the saturated zone) is $\geq1\times10^{-5}$ then the solid material will be managed as an F001 listed waste. The drill cuttings will be collected from the frac tank and placed into containers for storage pending disposition as an F001 hazardous waste. The liner material will be subject to a clean debris surface standard.

4. WELL LOCATIONS

The locations of the wells addressed in this request (TAN-53 [MZIW], TAN-54 [PNA-3], and TAN-55 [PNA-5]) are provided in a plume map (See Attachment 1). Attachment 2 is enclosed to provide the projected waste quantities for the drilling activities.

5. SAMPLING FREQUENCY AND LOCATION

5.1 Drilling Water
Two samples will be collected from the discharge line at the frac tank in accordance with the Sampling and Analysis Plan for PQ Interbed Sampling at Test Area North, Operable Unit 1-07B (Jolley 2000).

5.2 If needed the number of samples to be taken for drill cuttings and containment pad soil and gravel are described in the Field Sampling Plan (FSP) (Tomlinson 1998) previously submitted and approved by DEQ. This plan will be revised to add these wells to the existing sampling and analysis approach.

5.2.1 Drill Cuttings
Five samples will be collected from the estimated 500 ft^3 of drill cuttings generated for each well.

5.2.2 Containment Pad Soil, Gravel, and Liner Material
For drilling containment pad sampling, the FSP identifies a typical sample grid and sampling approach based on observation of where drilling water leaks or flows onto the pad occurred during the drilling operation.

6. SAMPLING AND ANALYSIS METHODS AND QA/QC

6.1 Water Analysis

Water samples will be analyzed at the INEEL Analytical Laboratory Department (ALD) laboratory at INTEC according to EPAs SW-846 Method 8260. The INTEC laboratory has been approved by the BBWI Sample Management Office (SMO). The OU 1-07B project will provide the normal suite of QA/QC samples (field and trip blanks, matrix spike and matrix spike duplicates) to the ALD INTEC laboratory. The ALD INTEC laboratory also undergoes a program of BBWI SMO-administered monthly performance evaluation (PE) samples in support of the OU 1-07B project. Under this PE program two water PE samples (single blind spiked samples) per month are provided to the ALD INTEC lab for analysis. Results from the analysis in the lab are compared against certified values for the samples provided.

6.2 Drill Cuttings and Containment Pad Material Analysis

Drill cuttings and secondary containment pad material samples will be analyzed in accordance with the FSP (Tomlinson 1998). The FSP identifies data needs, data quality objectives, data validation requirements, sample locations and quantities, sampling methods, and analytical methods. Samples will be sent to a BBWI SMO approved off site lab for analysis.

Should you have any questions on this issue, please feel free to contact me at (208) 526-4704 or Mr. Dave Wessman, DOE-ID, at (208) 526-0082.

Sincerely,

R. H. Guymon, Director
Environmental Affairs

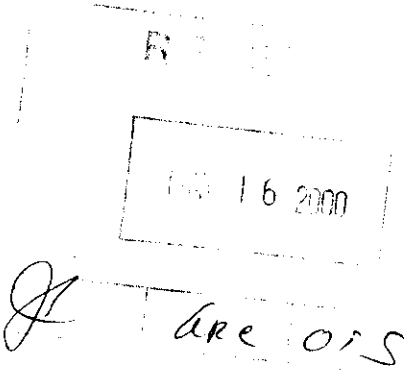
RAM:kd

Attachments

cc: R. E. Bullock, DEQ
R. J. Hoyle, DOE-ID, MS 1221
D. L. Korkukluoglu, BBWI, MS 3600
R. M. Shaw, DOE-ID, MS 1117
DW 5-15-00 D. L. Wessman, DOE-ID, MS 1146

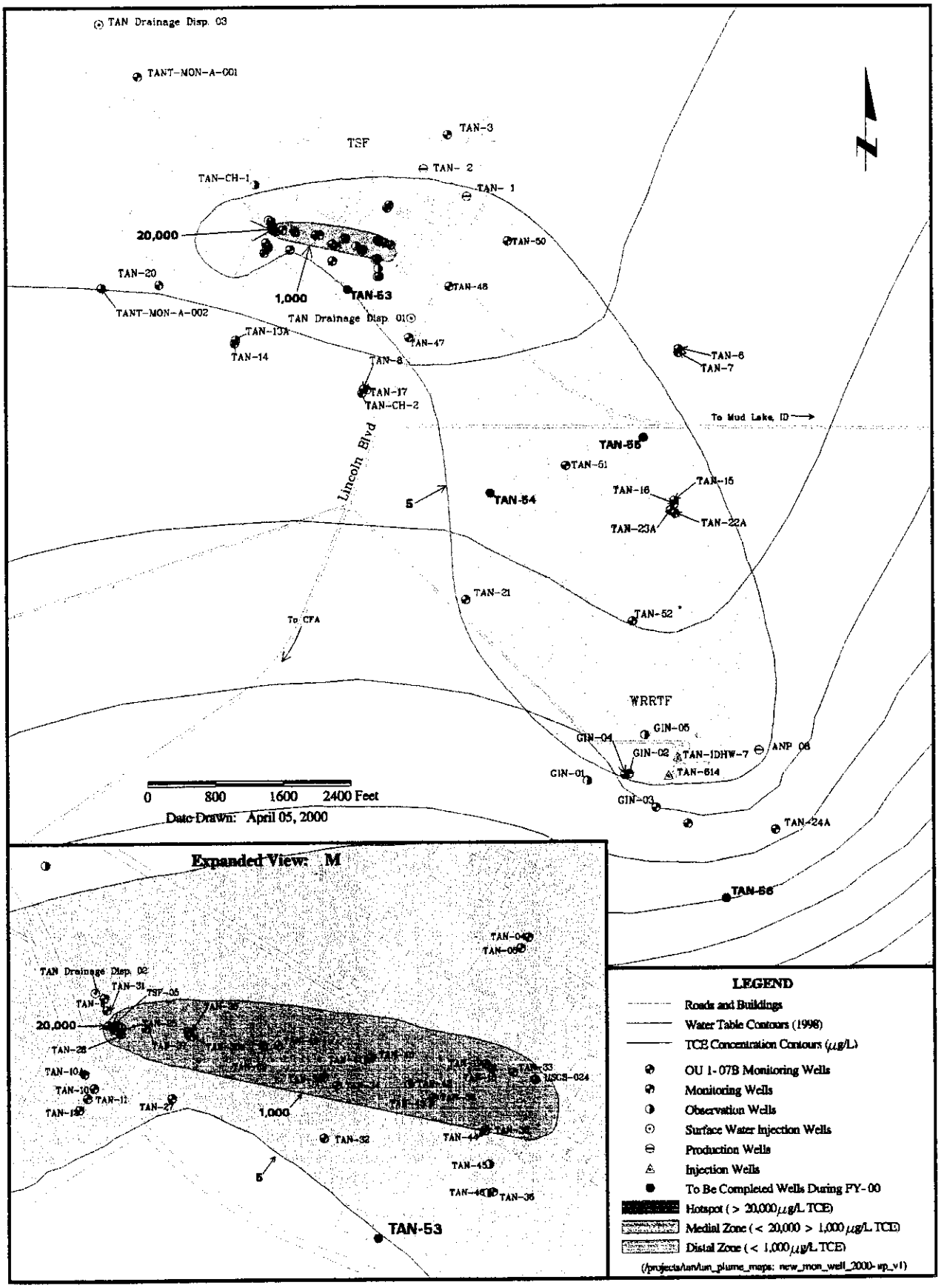
bcc: Correspondence Control Center, MS 3600
R. H. Guymon File (RHG-71-00)
J. M. Connolly, BBWI, MS 3428
A. E. Jantz, BBWI, MS 3921
D. J. Kuhns, BBWI, MS 3921
R. A. Montgomery, BBWI, MS 3428
L. N. Peterson, BBWI, MS 3921
J. S. Rothermel, BBWI, MS 3921
J. E. Rugg, BBWI, MS 3428
J. P. Shea, BBWI, MS 3915
ARDC, MS 3922

Uniform File Code: 6104
Disposition Authority: EA-CFL-1
Retention Schedule: pending



Attachment 1

Plume Map with Well Locations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TSF
TAN-3
TAN-2
TAN-1
TAN-CH-1
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1,000
TAN-53
TAN-50
TAN-48
TAN-20
TANT-MON-A-002
TAN Drainage Disp. 01
TAN-13A
TAN-14
TAN-47
TAN-8
TAN-17
TAN-CH-2
TAN-6
TAN-7
To Mud Lake, ID
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TAN-51
TAN-54
5
Lincoln Blvd
TAN-16
TAN-15
TAN-22A
TAN-23A
TAN-21
TAN-52
To CFA
WRRTF
GIN-05
GIN-04
GIN-02
TAN-1DHW-7
ANP 06
TAN-614
GIN-01
GIN-03
TAN-24A
TAN-56
0
800
1600
2400 Feet
Date Drawn: April 05, 2000
Expanded View: M
TAN-04
TAN-05
TAN Drainage Disp. 02
TAN-31
TSF-05
TAN-28
TAN-10
TAN-09
TAN-11
TAN-12
TAN-27
TAN-33
USGS-024
TAN-32
TAN-44
TAN-45
TAN-46
TAN-36
TAN-53
LEGEND
Roads and Buildings
Water Table Contours (1998)
TCE Concentration Contours (µg/L)
OU 1-07B Monitoring Wells
Monitoring Wells
Observation Wells
Surface Water Injection Wells
Production Wells
Injection Wells
To Be Completed Wells During FY-00
Hotspot (> 20,000 µg/L TCE)
Medial Zone (< 20,000 > 1,000 µg/L TCE)
Distal Zone (< 1,000 µg/L TCE)
(/projects/lan/lun_plume_maps: new_mon_well_2000-wp_v1)

Attachment 2

Table 1 Projected Waste Quantities

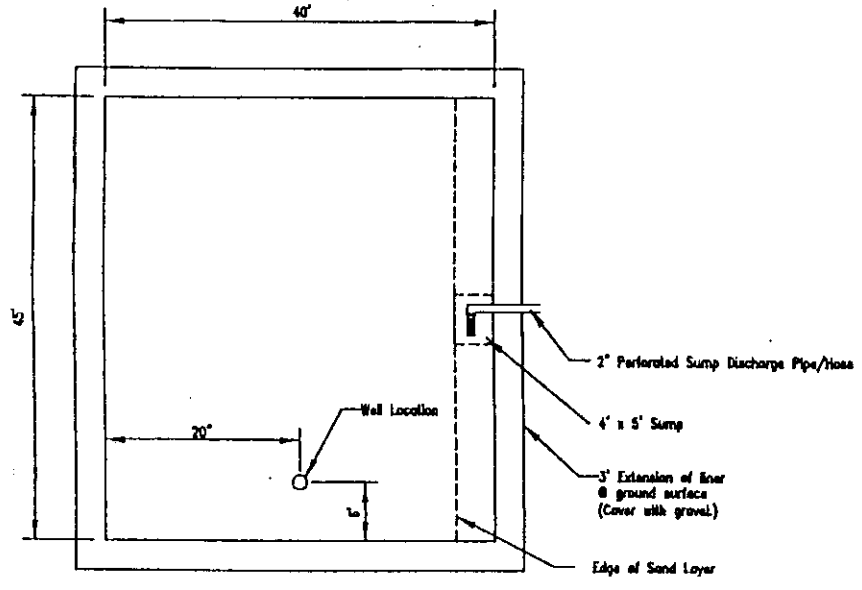
Table 1. Projected waste quantities.

Planned Well Designation	Drill Water Generated (gallons)	Drill Water to Containment[a] (gallons)	Drill Cuttings (ft^3)	Secondary Containment Materials (ft^3)
TAN-53	15,000	300	500	3,000
TAN-54	15,000	300	500	3,000
TAN-55	15,000	300	500	3,000
Total	45,000	900	1,500	9,000

a. This column represents the amount of water that actually enters the containment pad via leakage from the drill diverter seal during drilling operations. The majority of this water is collected in the pad sump and is pumped to the frac tank.

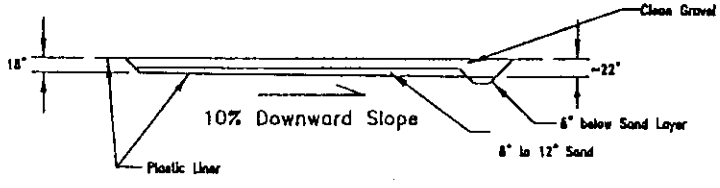
Attachment 3

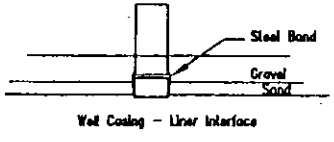
Containment Pad Detail



Notes:

- The drilling areas will be cleared and excavated as shown for pad and sump.
- Gravel will be backfilled until there is a level surface near the same elevation as the original ground surface.
- A 35 mil plastic liner material will be provided as CFE. The liner material will be 24' wide. The subcontractor is responsible for cutting the material to length and ensuring any seams required in the plastic liner are sealed using waterproof tape compatible with the liner material. The tape shall be installed in accordance with manufacturers requirements.
- The side in which the sump is located will be dependent on drilling location. The drainage direction and the sump location will be determined by the Parsons CE.
- The sump pump will be located within either the drill rig secondary containment pad or the frac tank secondary containment area.
- The drill rig will straddle the containment berm with no interference between the rig and the berm. The rig stabalizing out riggers will be placed within the containment pad. The out riggers will sit on wood spread pads. The liner will be protected at these points by the sand layer.





Well Casing – Liner Interface

Drilling Containment Pad Details